

CLAIMS

1. A digital controller device for controlling adjustable power module comprising:
 - 5 at least one analog to digital converter for converting analog user input signal to digital input;
 - a micro-controller adapted to receive said input digital information and operate at least one digital to analog unit in response to said digital input information ;
 - 10 at least one digital to analog converter unit adapted to produce analog input signal for controlling adjustable module.
2. The device according to claim 1, wherein said micro-controller further comprising at least one digital input for receiving at least one user
15 digital command.
3. The device according to claim 2, wherein said at least one digital input receiving at least one user digital command from at least one front panel.
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4. The device according to claim 2, wherein said at least one user digital command is used to instruct said micro-controller to change its response to said digital input information.
- 25 5. The device according to claim 1, further comprising at least one analog to digital converter for receiving analog monitoring output signal from adjustable module and transmitting output digital information indicative of said analog monitoring output signal to said micro-controller.
- 30 6. The device according to claim 5, further comprising at least one digital to analog converter producing analog user output signal

indicative of the status of the controlled power system in response to digital information received from said micro-controller.

- 5 7. The device according to claim 6, wherein the relation between user output signal and analog monitoring output signal is controlled by micro-controller according to its programming.
- 10 8. The device according to claim 1, further comprising at least one digital communication interface connected to said micro-controller and capable of receiving digital control commands and transmitting digital output.
- 15 9. The device of claim 1 wherein the relation between analog input signal and analog user input signal is controlled by micro-controller to essentially follow the linear equation: analog input signal equals A multiplies by the subtraction of B from analog user input signal.
- 20 10. The device according to claim 9, wherein said micro-controller further comprising at least one digital input for receiving at least one user digital command wherein said user digital command changes the values of at least one of the parameters A , B , or both.
- 25 11. The device according to claim 10, wherein calibrating the response of adjustable module to analog user input signal is performed by changing the values of at least one of the parameters A or B .
- 30 12. The device according to claim 1, wherein the relation between analog input signal and analog user input signal is controlled by said micro-controller to follow a non-linear function.

13. The device according to claim 12, wherein the relation between user output signal and analog monitoring output signal is controlled by micro-controller to essentially follow the linear equation: user output signal equals C times subtraction of D from analog monitoring output signal.
14. The device according to claim 13, wherein said micro-controller further comprising at least one digital input for receiving at least one user digital command wherein said user digital command changes the values of at least one of the parameters C, D, or both.
15. A controlled power system comprising:
- an adjustable module, wherein at least one working parameter of said adjustable module is controlled by analog input;
 - a digital controller device for controlling adjustable power module comprising:
 - at least one analog to digital converter for converting analog user input signal to digital input information;
 - a micro-controller adapted to receive said digital input information and operate at least one digital to analog unit in response to said digital input information;
 - at least one digital to analog converter unit adapted to produce analog input signal for controlling said adjustable module.
16. A method for controlling adjustable module comprising:
- receiving analog user input signal;
 - converting said analog user input signal to digital input information;
 - processing digital input information using a micro-controller;
 - producing at least one analog input signal for controlling adjustable module by a digital to analog unit in response to the processed digital input information.

17. The method as claimed in Claim 16 wherein processing digital input information is a linear transformation between said user input signal and said analog input signal according to the equation: analog input
5 signal equals A multiplies by the subtraction of B from analog user input signal.
18. The method as claimed in Claim 17, wherein said A and B are determined by calibration process.
- 10 19. The method as claimed in Claim 16, wherein said processing is adapted to adjust said user input signal to standards used for analog input of adjustable module.